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| 09/702,160 | 10/30/2000 | Thomas C. Harrop | 50671-P012US-10004457 | 1336 |

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| EXAMINER | |
|---|---|
| PWU, JEFFREY C | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2143 | |

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/702,160 | HARROP, THOMAS C. | |
| | Examiner | Art Unit | |
| | Jeffrey C. Pwu | 2143 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-58 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-58 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 101*

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

For a claim to be statutory under 35 USC 101 the following two conditions must be met:

1) In the claim, the practical application of an algorithm or idea result in a useful, concrete, tangible result, AND

2) The claim provides a limitation in the technological art that enables a useful, concrete, tangible result.

As to the technology requirement, note MPEP Section iV 2(b). Also note In Re Waldbaum, 173USPQ 430 (CCPA 1972) which teaches "useful arts" is synonymous with "technological arts". In re Musgrave, 167USPQ 280 (CCPA1970), In re Johnston, 183USPQ 172 (CCPA 1974), and In re Toma, 197USPQ 852 (CCPA 1978), all teach a technological requirements.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 1 is vague and indefinite because it is unclear and lacks concrete steps on how to evaluate the gathered information.

6. Claim 2 is vague and indefinite because it is unclear what is an "appropriate" action in preventing performance problem from occurring.

7. Claim 3 is vague and indefinite because it is unclear what is an "appropriate" action.

8. Claim 4 is vague and indefinite because it is unclear what is an "appropriate" action.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-58 are rejected under 35 U.S.C. 102(e) as being unpatentable over Sampath et al. (U.S. 6,892,317).

Sampath et al. disclose claims :

1. A method of managing a network comprising the steps of: polling resources of the network to gather real-time status information about the network; evaluating the gathered real-time status information; and based on the gathered real-time status information, predicting whether a future performance problem is to be encountered within the network. ( abstract, col.1, line 33-col.2, line 30)

2. The method of claim 1 further comprising the step of: determining an appropriate action for preventing said performance problem from occurring. (col.1, line 33-col.2, line 30)

3. The method of claim 2 wherein said determining step includes determining said appropriate action from at least one previously defined rule. (col.1, line 33-col.2, line 30)

4. The method of claim 2 further comprising the step of: initiating said appropriate action before said performance problem occurring in an attempt to prevent said performance problem. (col.1, line 33-col.2, line 30)

5. The method of claim 1 wherein said evaluating of the gathered status information further includes: correlating the gathered status information with at least one previously defined rule. (150)

6. The method of claim 5 wherein the at least one rule defines a known pattern for status information that foreshadows the occurrence of a performance problem. (150)

7. The method of claim 1 wherein said performance problem is any one or more of the problems selected from: operability problem of one or more network elements, operability problem of the network, failure of one or more network elements, failure of the network, integrity problem of one or more network elements, integrity problem of the network, efficiency problem of one or more network elements, efficiency problem of the network, decreased processing speed of one or more network elements, decreased processing speed of the network, usage capacity problem of one or more network elements, and usage capacity problem of the network. (col.6, line 17-col.7, line 11)

8. The method of claim 1 wherein said gathering step includes gathering status information for any one or more of: network status, disk status, database status, memory status, CPU status, and operating system status. (col.6, line 17-col.7, line 11)

9. The method of claim 1 wherein said gathering step includes gathering status information by a plurality of distributed gateways that are communicatively coupled to a central management system. (140; S110)

10. The method of claim 3 wherein said providing at least one rule includes a user defining said at least one rule. (150)

11. (The method of claim 3 wherein said at least one rule is implemented as software code executing on a management system. (150)

12. The method of claim 3 further comprising: said at least one rule correlating disparate network elements. (150)

13. The method of claim 3 further comprising: said at least one rule correlating disparate characteristics of one or more network elements. (col.6, line 17-col.7, line 11)

14. The method of claim 13 wherein said disparate characteristics include those selected from: CPU run queue capacity, CPU run queue blocks, CPU run queue waits, context switching, memory paging, swap allocation, disk writes, disk blocking, disk waiting, disk utilization, network inbound packets, network outbound packets, network errors, and network collisions. (520)

15. A system for managing a network, said system comprising: at least one polling gateway that is operable to gather real-time status information for one or more network elements; at least one processor-based management server communicatively coupled to the at least one polling gateway to receive the gathered real-time status information

from said at least one polling gateway; and the at least one processor-based management server predicting the occurrence of a performance problem within the network based on the gathered real-time status information. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

16. The system of claim 15 wherein said one or more network elements include a plurality of network elements distributed in the network. (col.9, lines 4-53)

17. The system of claim 15 wherein said one or more network elements include a plurality of disparate network elements. (col.9, lines 4-53)

18. The system of claim 15 wherein said at least one polling gateway includes a plurality of distributed polling gateways. (col.10, line 10-col.11, line 60)

19. The system of claim 15 wherein said plurality of distributed polling gateways include polling gateways that are each operable to poll particular ones of disparate network elements. (col.10, line 10-col.11, line 60; 140; 600)

20. The system of claim 19 wherein said disparate network elements include network elements that communicate in different protocols. ("the prediction/diagnostic circuit 150 processes the prediction information in accordance with a number of protocols")

21. The system of claim 20 wherein said disparate network elements include network elements selected from: SNMP network elements, CMIP network elements, and network elements using TCP/IP protocol. (150)

22. The system of claim 15 wherein at least one rule defines an appropriate action for said at least one processor-based management server to respond to a defined condition being detected. (col.1, line 33-col.2, line 30)

23. The system of claim 22 wherein said appropriate action is an action for attempting to prevent the performance problem predicted by the detection of said defined condition from occurring. (col.6, line 17-col.10, line 46)

24. The system of claim 22 wherein upon detection of said defined condition, said at least one processor-based management server initiates said appropriate action before said performance problem occurring. (col.1, line 33-col.2, line 30)

25. The system of claim 15 wherein at least one rule defines a known pattern for status information that foreshadows the occurrence of a performance problem.

26. The system of claim 15 wherein at least one rule defines statistical analysis of said status information that foreshadows the occurrence of a performance problem. (col.1, line 33-col.2, line 30)

27. The system of claim 15 wherein at least one rule defines a known correlation of status information that foreshadows the occurrence of a performance problem. (col.1, line 33-col.2, line 30)

28. The system of claim 15 wherein said performance problem is any one or more of the problems selected from: operability problem of one or more network elements, operability problem of the network, failure of one or more network elements, failure of the network, integrity problem of one or more network elements, integrity problem of the network, efficiency problem of one or more network elements, efficiency problem of the network, decreased processing speed of one or more network elements, decreased processing speed of the network, usage capacity problem of one or more network elements, and usage capacity problem of the network. (col.1, line 33-col.2, line 30)

29. The system of claim 15 wherein said status information includes one or more from: network status, disk status, database status, memory status, CPU status, and operating system status. (fig.3B)

30. A management system for managing one or more layers of a network, wherein said managing includes predicting performance problems that are to occur within one or more layers of the network and taking responsive actions in an attempt to prevent or timely respond to predicted performance problems, said management system

comprising: at least one processor-based management server communicatively coupled to at least one polling gateway that is operable to poll at least one network element to gather real-time status information for said at least one network element; the at least one processor-based management server including software code executing thereon, wherein said software code learns a condition for predicting a performance problem within the network from said gathered real-time status information to enable the processor-based management server to predict the occurrence of a performance problem within the network. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

31. The management system of claim 30 wherein said one or more network elements include a plurality of network elements distributed in the network. (col.9, lines 4-53)

32. The management system of claim 30 wherein said one or more network elements include a plurality of disparate network elements. (col.9, lines 4-53)

33. The management system of claim 30 wherein said at least one polling gateway includes a plurality of distributed polling gateways. (col.10, line 47-col.7, line 8)

34. The management system of claim 30 wherein said plurality of distributed polling gateways include polling gateways that are each operable to poll particular ones of disparate network elements. (100)

35. The management system of claim 34 wherein said disparate network elements include network elements that communicate in different protocols. ("the prediction/ diagnostic circuit 150 processes the prediction information in accordance with a number of protocols")

36. The management system of claim 35 wherein said disparate network elements include network elements selected from: SNMP network elements, CMIP network elements, and network elements using TCP/IP protocol. (150)

37. The management system of claim 30 wherein at least one rule defines an appropriate action for said at least one processor-based management server to take in response to said defined condition being detected. (150)

38. The management system of claim 37 wherein said appropriate action is an action for attempting to prevent the performance problem predicted by the detection of said defined condition from occurring. (150)

39. The management system of claim 37 wherein upon detection of said defined condition, said at least one processor-based management server initiates said appropriate action before said performance problem occurring. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

40. The management system of claim 30 wherein said learned condition includes a pattern for status information that foreshadows the occurrence of a performance problem. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

41. The management system of claim 30 wherein said learned condition includes statistical analysis of said status information that foreshadows the occurrence of a performance problem. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

42. The management system of claim 30 wherein said learned condition includes correlation of status information that foreshadows the occurrence of a performance problem. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

43. The management system of claim 30 wherein said performance problem is any one or more of the problems selected from: operability problem of one or more network elements, operability problem of the network, failure of one or more network elements, failure of the network, integrity problem of one or more network elements, integrity problem of the network, efficiency problem of one or more network elements, efficiency problem of the network, decreased processing speed of one or more network elements, decreased processing speed of the network, usage capacity problem of one or more

network elements, and usage capacity problem of the network. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

44. The management system of claim 30 wherein said status information includes one or more from: network status, disk status, database status, memory status, CPU status, and operating system status. (fig.1, 10, 610, 155, 150, 160)

45. The management system of claim 30 wherein said at least one network element is represented as an object within object-oriented software executing on the processor-based server, said object having one or more attributes for which said status information may be gathered. (col.9, line 5-50)

46. The management system of claim 45 wherein said learned condition includes correlation of one or more attributes of one or more objects to define the prediction of a performance problem. (col.3, line 43-col.4, line 4)

47. The management system of claim 30 wherein said management system includes a business management layer. (400, 700)

48. The management system of claim 47 wherein said performance problem includes a business performance problem. (400, 700)

49. The management system of claim 48 wherein said at least one network element includes an electronic commerce system for processing commercial transactions with customers via the Internet, and wherein said business performance problem includes a problem resulting in inability of said electronic commerce system processing said commercial transactions. (400, 700)

50. The management system of claim 30 wherein said management system includes a service management layer. (400, 700)

51. The management system of claim 50 wherein said performance problem includes a service performance problem. (400, 700)

52. The management system of claim 51 wherein said service performance problem includes problem with the quality provided to subscribers or clients of the managed network. (400, 700)

53. The management system of claim 30 wherein said management system includes a network management layer. (400, 700)

54. The management system of claim 53 wherein said performance problem includes a network performance problem. (150)

55. The management system of claim 30 wherein said management system includes an element management layer. (150)

56. The management system of claim 55 wherein said performance problem includes a network element performance problem. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

57. The management system of claim 30 wherein said management system includes a plurality of at least the following layers: business management layer, service management layer, network management layer, and element management layer, and wherein a plurality of said layers are correlated within said at least one rule. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

58. The management system of claim 30 wherein said management system includes a plurality of at least the following layers: business management layer, service management layer, network management layer, and element management layer, and wherein said performance problem is a problem within any of said plurality of layers. (abstract, col.1, line 33-col.2, line 30; col.2, line 34-col.3, 50, col.6, line 17-col.7, line 45)

***Response to Arguments***

11. Applicant's arguments with respect to claims 1-58 have been considered but are moot in view of the new ground(s) of rejection.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey C. Pwu whose telephone number is 571-272-6798. The examiner can normally be reached on 7:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 3, 2005

JEFFREY PWU
PRIMARY EXAMINER